

**ANNEX  
BETWEEN  
THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
AMES RESEARCH CENTER  
AND  
ARROW TECH ASSOCIATES  
UNDER SPACE ACT UMBRELLA AGREEMENT NO. 35883 / SAA2-403674  
(ANNEX NUMBER ONE)**

**ARTICLE 1. PURPOSE**

This Annex One to the Reimbursable Space Act Umbrella Agreement SAA2-403674 (the "Umbrella Agreement") between Arrow Tech Associates ("ATA" or "Partner") and NASA Ames Research Center ("NASA" or "NASA ARC") shall be for the purpose of performing aerodynamic performance testing of Platform Agnostic Weapon System (PAWS) configurations over a range of flight conditions to collect aerodynamic force and moment data using the 11x11-Foot Transonic Wind Tunnel ("TWT") of the NASA ARC Unitary Plan Wind Tunnel ("UPWT") complex. This Annex is consistent with NASA's mission to drive advances in aeronautics. Each capitalized term used in this Annex One, but not defined herein, shall have the meaning ascribed to it in the Umbrella Agreement.

The legal authority for this Annex, consistent with the Umbrella Agreement, is in accordance with the Space Act, Other Transactions Authority (OTA), 51 U.S.C. § 20113(e).

**ARTICLE 2. RESPONSIBILITIES**

A. NASA ARC will use reasonable efforts to:

1. Provide use of NASA ARC's TWT and associated preparation facilities to perform a wind tunnel test that meets the testing conditions as defined by ATA, in its final wind tunnel testing requirements.
2. Provide use of existing instrumentation and model support hardware from NASA ARC's inventory associated with the UPWT facility as needed. This will include provisions for labor; equipment and supporting resources necessary to plan, prepare, and perform testing; and data analysis support.
3. Deliver reduced wind tunnel data to ATA after completion of final test program.

B. Partner will use reasonable efforts to:

1. Provide wind tunnel test models with supporting documentation that meets NASA ARC's wind tunnel model safety criteria.

2. Provide model interface hardware to NASA that meets NASA ARC's safety criteria, unless compatible interface hardware already exists in NASA ARC's inventory.
3. Provide instrumentation and/or data systems that are not part of NASA ARC's existing inventory if needed. Where required, these components/systems shall be compatible with the NASA ARC Standard Data System.
4. Provide a test plan that includes a prioritized run matrix to indicate: model and control surface settings; model angle of attack; Mach number; other desired tunnel conditions; and acceptable tolerance levels.
5. Provide personnel and additional hardware to perform test coordination; model configuration changes and customer-supplied instrumentation; and data system support.

### ARTICLE 3. SCHEDULE AND MILESTONES

The planned major milestones for the activities for this Annex defined in the "Responsibilities" Article are as follows:

Milestone	Estimated Completion
Final Wind Tunnel Requirements Defined (ATA)	30 days prior to TWT entry
Receipt of Models and interface hardware at NASA ARC (ATA)	Two weeks prior to TWT entry
Enter 11x11-Foot TWT for Testing (Both Parties)	On or about September 12, 2022
Completion of Wind Tunnel Testing (Both Parties)	On or about two weeks after TWT entry
Transmittal of Reduced Wind Tunnel Data to Partner (NASA)	Within two weeks after test completion of final test program

### ARTICLE 4. FINANCIAL OBLIGATIONS

- A. Partner agrees to reimburse NASA an estimated cost of \$420,000 for NASA to carry out its responsibilities under this Annex. Each payment shall be marked with Ames, Annex One, SAA2-403674-1.
- B. NASA will not provide services or incur costs beyond the current funding. Although NASA has made a good faith effort to accurately estimate its costs, it is understood that NASA provides no assurance that the proposed effort under this Annex will be accomplished for the estimated amount. Should the effort cost more than the estimate, Partner will be advised by NASA as soon as possible. Partner shall pay all costs incurred and have the option of canceling the remaining effort, or providing additional funding in



order to continue the proposed effort under the revised estimate. Should this Annex be terminated, or the effort completed at a cost less than the agreed-to estimated cost, NASA shall account for any unspent funds within 3 months after completion of all effort under this Annex, and promptly thereafter, at Partner's option return any unspent funds to Partner or apply any such unspent funds to other activities under the Umbrella Agreement. Return of unspent funds will be processed via Electronic Funds Transfer (EFT) in accordance with 31 C.F.R. Part 208 and, upon request by NASA, Partner agrees to complete the Automated Clearing House (ACH) Vendor/Miscellaneous Payment Enrollment Form (SF 3881).

#### ARTICLE 5. INTELLECTUAL PROPERTY RIGHTS - DATA RIGHTS

A. Data produced under this Annex which is subject to paragraph C. of the Intellectual Property Rights - Data Rights Article of the Umbrella Agreement will be protected for the period of three years.

B. Under paragraph H. of the Intellectual Property Rights - Data Rights Article of the Umbrella Agreement, Disclosing Party provides the following Data to Receiving Party. The lists below may not be comprehensive, are subject to change, and do not supersede any restrictive notice on the Data provided.

1. Background Data:

The Disclosing Party's Background Data, if any, will be identified in a separate technical document.

2. Third Party Proprietary Data:

The Disclosing Party's Third Party Proprietary Data, if any, will be identified in a separate technical document.

3. Controlled Government Data:

The Disclosing Party's Controlled Government Data, if any, will be identified in a separate technical document.

4. The following software and related Data will be provided to Partner under a separate Software Usage Agreement:

None.

#### ARTICLE 6. TERM OF ANNEX

This Annex becomes effective upon the date of the last signature below ("Effective Date") and shall remain in effect until the completion of all obligations of both Parties hereto, or one year from the Effective Date, whichever comes first, unless such term

exceeds the duration of the Umbrella Agreement. The term of this Annex shall not exceed the term of the Umbrella Agreement. The Annex automatically expires upon the expiration of the Umbrella Agreement.

#### ARTICLE 7. RIGHT TO TERMINATE

Either Party may unilaterally terminate this Annex by providing thirty (30) calendar days written notice to the other Party.

#### ARTICLE 8. POINTS OF CONTACT

The following personnel are designated as the Points of Contact between the Parties in the performance of this Annex.

##### Management Points of Contact

###### NASA Ames Research Center

Matthew J. Holtrust  
Agreement Manager  
Mail Stop: 223-3, Room 100  
Moffett Field, CA 94035  
Phone: (650) 604-4069  
matthew.j.holtrust@nasa.gov

###### Arrow Tech Associates

Name: Mark Steinhoff  
Title: President  
1233 Shelburne Rd D7  
South Burlington, VT 05403-7700  
Phone: 802-865-3460  
Email: mark@prodas.com

##### Technical Points of Contact

###### NASA Ames Research Center

Francis J. Kmak  
Wind Tunnel Division Chief  
Mail Stop: 227-4  
Moffett Field, CA 94035  
Phone: (650) 604-1463  
francis.j.kmak@nasa.gov

###### Arrow Tech Associates

Name: Dan Pruzan  
Title: Dir. of Advanced Programs  
1233 Shelburne Rd D7  
South Burlington, VT 05403-7700  
Phone: 802-865-3460  
Email: dan@arrowtechassociates.com

#### ARTICLE 9. MODIFICATIONS


Any modification to this Annex shall be executed, in writing, and signed by an authorized representative of NASA and the Partner. Modification of an Annex does not modify the terms of the Umbrella Agreement.

#### ARTICLE 10. SIGNATORY AUTHORITY

The signatories to this Annex covenant and warrant that they have authority to execute this Annex. By signing below, the undersigned agrees to the above terms and conditions.

**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
AMES RESEARCH CENTER**

BY: \_\_\_\_\_  
Huy K. Tran  
Director of Aeronautics

BY:   
Name: Mark Steinhoff  
Title: President

DATE: \_\_\_\_\_

DATE: 2/24/2022